ABSTRACT

An improvement in electrode reliability is realized by preventing over-etching on a peripheral lower portion of an electrode while maintaining the flow of steps of roughening a surface after forming the electrode on a semiconductor substrate. After a P-side electrode 4 is formed on a main surface 3a of a semiconductor substrate 3, a surface of the P-side electrode 4 is selectively covered with a protective film 12, after the semiconductor substrate 3 is cut into chips, the surface is roughened from above the protective film 12, the main surface 3a around the P-side electrode 4 and a side surface are roughened with a non-chemical treatment region 10 which is a non-roughened surface region being left in a peripheral portion of the P-side electrode 4 covered with the protective film 12, and thereafter the protective film 12 is removed.